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IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: Andrei PONOMARENKO

Appl. No.: 10/066,033

Group: 2141

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Examiner: K. Shingles

For: SYSTEM FOR MANAGING CONFIGURATION
MEMORY WITH TRANSACTION AND
REDUNDANCY SUPPORT IN AN OPTICAL
NETWORK ELEMENT

AMENDED APPEAL BRIEF

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I. **REAL PARTY IN INTEREST**

The real party in interest is Ciena Corporation, the assignee of record of the subject patent application.

II.   RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any prior or pending appeals, judicial proceedings or interferences which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-9 have been canceled. Claims 10 through 30 are currently pending and have been finally rejected. Appellant hereby appeals the rejections of Claims 10 through 30.

IV.   STATUS OF AMENDMENTS

The only amendment filed in the subject patent application subsequent to issuance of the Final Rejection on July 13, 2005 was an amendment to Claim 11 to correct a typographical error. It is believed that the amendment was entered as there is no indication otherwise in the Examiner's Advisory Action.

V.   SUMMARY OF CLAIMED SUBJECT MATTER

Appellant's invention as set for the in Claim 10 is directed to a system of managing a configuration database within a network management program for a SONET ring network; (See specification page 7, lines 12-13 and Fig.1) the system includes: a plurality of managed objects representing logical representations of network entities that can be configured and modified through transactions executed by the network management program (See specification page 4, lines 10-12 and page 10, lines 20-22 and Fig. 2A) and wherein one or more of the managed objects include an object reference and a storage location pointer to another of the managed objects (See specification page 11, lines 9-20 and Figs. 2A, 2B and 2C); the another of the managed objects being accessed by a combination of the object reference and the storage location pointer associated with the one or more of the managed objects (See specification page 11, lines 15-20 and Fig. 2B); an agent process that receives transaction commands from a command handler (See specification Fig. 3 and page 12, lines 22-23 and page 13, line 15 – page 14, line 2 and Fig. 2C); a database manager that receives the transaction commands from the agent process and a database file that stores commands from the database manager (See specification page 17, line 22 – page 18, line 2); and a transaction log file that stores actions included within transactions issued by the database manager. (See Fig. 10 and specification page 18, lines 16-23)

Appellant's invention as set forth in Claim 16 is directed to an apparatus for managing a configuration database within a network management program for a

computer network (See specification page 7, lines 12-13 and Fig.1 and specification page 10, lines 6-9) the apparatus comprising: a loader module for loading a plurality of managed objects into system memory of the computer network upon a start-up event of the computer network (See specification page 18, lines 8-15 and specification page 19, lines 22-23); wherein a first one of the managed objects includes object reference information and pointer information in order to access at least a second one of the managed transactions (See specification page 11, lines 9-20 and Figs. 2A and 2B); an agent process for creating new transactions or opening existing transactions affecting one or more of the managed objects modified by the transactions (See specification page 13, line 20 – page 14, line 2 and Fig. 2C); a transaction saving module for saving the loaded transactions in non-volatile memory (See specification page 18, lines 7-10 and original claim 16); a recovery module for restoring previous transactions executed prior to a failure condition. (See specification page 20, lines 12-21)

Appellant's invention as set forth in Claim 23 is directed to a system of managing a configuration database within a network management program for a SONET ring network (See specification page 7, lines 12-13 and Fig.1) including an active network coupled in parallel to a standby network (See specification page 8, lines 6-23 and Fig.1) the system comprising; a plurality of managed objects representing logical representations of network entities that can be configured and modified through transactions executed by the network management program (See specification page 4, lines 10-12); wherein at least a first one of the managed objects includes object reference information and pointer information in order to access at least a second one of the managed transactions (See specification page 11, lines 9-20 and Figs. 2A and 2B);

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an agent process that receives transaction commands from a command handler (See Fig. 3 and page 12, lines 22-23 and page 13, line 15 – page 14, line 2 and Fig. 2C); a database manager that receives the transaction commands from the agent process and a database file that stores commands from the database manager in the active network (See page 17, line 22 – page 18, line 2); a transaction log file that stores actions included within transactions issued by the database manager (See Fig. 10 and specification page 18, lines 16-23) and a synchronization manager that writes the actions included within the transactions to a synchronization database stored on the standby network (See specification page 12, lines 12-19 and page 17, lines 6- 21).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are to be reviewed in the subject appeal:

(1) Whether Claims 10 through 12 and 21 are obvious under 35 U.S.C. 103 (a) based on the combination of U.S. Patent No. 6,009,466 ("Axberg et al.") and U.S. Patent No. 6,260,062 ("Davis et al."),

(2) Whether Claims 13 through 20 and 22 through 30 are obvious under 35 U.S.C. 103(a) based on the combination of U.S. Patent No. 6,009,466 ("Axberg et al.") and U.S. Patent No. 6,260,062 ("Davis et al."), in view of U.S. Patent No. 6,115,715 (Traversat et al.).

VII. ARGUMENT

Appellants respectfully submit that none of Claims 10 through 12 and 21 are rendered obvious in view of Axberg et al. and Davis et al. because the necessary teaching, suggestion or motivation to combine these references is lacking. Further, even if the unobvious combination of Axberg et al. and Davis et al. is made, the combination fails to teach or suggest Appellants' invention. As such, the rejection of Claims 10 through 12 and 21 cannot be sustained.

Appellants respectfully submit that none of Claims 13 through 20 and 22 through 30 are rendered obvious in view of the combination of Axberg et al. and Davis et al. and Traversat et al. because the necessary teaching, suggestion or motivation to combine these references is lacking. Further, even if the unobvious combination of Axberg et al., Davis et al. and Traversat et al. is made, the combination fails to teach or suggest Appellants' invention. As such, the rejection of Claims 13 through 20 and 22 through 30 cannot be sustained.

Obviousness, ultimately, is a determination of law based on underlying determinations of fact. <u>Monarch Knitting Machinery Corp. v. Sulzer Morat Gmbh,</u> 139 F. 3d 877, 881 (Fed. Cir. 1998) "These underlying factual determinations include (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and, (4) the extent of any proffered objective indicia of non-obviousness." <u>Id.</u>

"During examination, *the examiner bears the initial burden of establishing a prima facie case of obviousness*...The prima facie case is a procedural tool, and

requires the examiner *to initially produce evidence to support a ruling of obviousness*. In re Kumar, 418 F.3d 1361, 1366, 76 USPQ 1048 (Fed. Cir. 2005)(emphasis added).

The invention must be considered as a whole without the benefit of hindsight, and the claims must be considered in their entirety. Rockwell International Corp. v. United States, 147 3 F.3d 1358, 1364 (Fed. Cir. 1998)

"One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." In re Fine, 837 F.2d 1071, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988). It is impermissible to use the claimed invention as a blueprint from which to reconstruct the prior art to satisfy the claimed invention. Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 227 USPQ 543, 548 (Fed. Cir. 1985) ("From its discussion of the prior art it appears to us that the court, guided by the defendants, treated each reference as teaching *one* or more of the specific components for use in the Feil system, although the Feil system did not then exist. Thus the court reconstructed the Feil system, using the blueprint of the Feil claims. As is well established, this is legal error.")

The prior art must be considered as a whole and suggest the desirability and thus the obviousness of making the combination. Lindermann Maschinefabrik Gmbh v. American Hoist and Derrick Co., 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984)

There must be a suggestion or motivation in the prior art to modify a reference to satisfy the claimed invention. In re Gordon, 221 USPQ 1125, 1127 (Fed. Cir. 1984). *"The mere fact that the prior art could be so modified would not have made the*

modification obvious unless the prior art suggested the desirability of the modification." *Id.* (emphasis added)

"When an obviousness determination is based *on* multiple references, there must be a showing of some 'teaching, suggestion, or reason' to combine the references...Although a reference need not expressly teach that the disclosure contained therein should be combined with another the showing *of* combinability, in whatever form, must be *'clear and particular."* Winner International Royalty Corp. v. Wang, 202 F.3d 1340, 1348-1349 (Fed. Cir.), cert. denied, 530 U.S. 1238 (2000)(emphasis added)

"'The factual inquiry whether to combine references must be thorough and searching'...*It must be based on objective evidence of record.* This precedent has been reinforced in myriad decisions and cannot be dispensed with... The need for specificity pervades this authority...This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority...'*Common knowledge and common sense,' even if assumed to derive from the agency's expertise, do not substitute for authority when the law requires authority."* In re Lee, 277 F.3d 1338, 1343-1345 (Fed. Cir. 2002) (emphasis added)

"There is no suggestion to combine, however, if a reference teaches away from its combination with another source." Tech Air, Inc., 192 F.3d at 1360 (emphasis added). See also Winner International Royalty Corp., 202 F.3d at 1349-1350 ("Second, if Johnson did in fact teach away from Moore, then that finding alone can defeat Wang's obviousness claim.")

"A reference may be said to teach away when a person of ordinary skill, upon reading the reference would be discouraged from following the path set *out* in the reference, *or* would be led in a direction divergent from the path taken by the applicant... [*or*] if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by applicant." In re Gurley, 27 F. 3d 551, 553, 31 USPQ 2d 1130, 1131 (Fed. Cir. 1994) and Tech Air, Inc. v. Denso Mfg. Michigan Inc., 192 F.3d 1353, 1360 (Fed. Cir. 1999).

A. THE REJECTION OF CLAIMS 10 THROUGH 12 AND 21 UNDER 35 USC 103 IS ERRONEOUS

1. Claim 10 is not rendered obvious by the combination of Axberg et al. and Davis et al.

At the outset, it should be understood that the reference of Axberg et al. is a network configuration planning program, not a network management program, i.e., Axberg et al. is a planning tool. (See Axberg et al. col. 2 lines 44-49) Therefore, Axberg et al. cannot meet any claim requirement that calls for actually configuring or modifing an element in an actual SONET ring network.

Claim 10 pertains to a system of managing a configuration database within a network management program for a SONET ring network. The system comprises among other requirements, "a plurality of managed objects representing logical representations of network entities that can be configured and modified through transactions executed by the network management program, wherein one or more of the managed objects include an object reference and a storage location pointer to *another* of the managed objects, the *another* of the managed objects being accessed by a

combination of the object reference and the storage location pointer..." (emphasis added) Axberg et al. as pointed out by the Examiner in the advisory action, notes in col. 9 lines 9-31 that the Connection class contains Port objects, wherein a Port object contains the location information of a port by having reference information on the physical device attached to the port. This disclosure of Axberg et al. does not meet the claim language. First, Axberg et al. has no disclosure that a port or a port object is a managed object. A managed object, as defined by Claim 10, represents a logical representation of network entities that can be configured and modified through transactions executed by the network management program. Second, Axberg et al. has no disclosure that *another* of the managed objects is accessed by a combination of the object reference and the storage location pointer.

Claim 10 further requires "an agent process that receives transaction commands from command handler". Axberg et al. does not disclose this portion of the system. The examiner relies on Axberg et al. for "an agent portion 431 is part of the storage management program which performs data gathering and monitoring functions." (See col.6, line 67 - col. 7, lines 1 and 2) This disclosure of Axberg et al. does not meet the claim requirement: "an agent process that receives transaction commands from a command handler" because transactions involve configuring and modification of network entities as set forth in claim 10.

Likewise, the portion of claim 10 that recites " a database manager that receives transaction commands from the agent process" cannot be met by the disclosure of Axberg et al. since Axberg et al. has no disclosure that an agent process sends transaction commands. Axberg et al. further does not disclose a database file that

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stores commands or a transaction log file that stores actions included within transactions.

The combination of Davis et al. with Axberg et al. does not cure the deficiencies of Axberg et al. since Davis et al. has only been applied to show a SONET network for element management. Further, even if combined, the combination of Davis et al. and Axberg et al. fail to teach or suggest the numerous claim limitations referenced above. When analyzed under the foregoing legal standards, the combination of Axberg et al. and Davis et al. cannot be sustained. Moreover, there is no teaching, suggestion or motivation to modify Axberg et al. for use with a SONET ring network. On the contrary, the combination can only be made through hindsight reconstruction.

For these reasons, the final rejection of Claim 10 cannot be sustained.

2. Claim 11 is not rendered obvious by the combination of Axberg et al. and Davis et al.

Claim 11 is patentable for the reasons set forth above in regard to Claim 10 and further view of the following: The passages of Axberg et al. cited in the final rejection namely (col.2 lines 15-28 and 47-67 and col. 8 lines 29-40 and col. 9 lines 36-61) do not disclose "logical dependencies among each of the managed objects are maintained through the linking of the storage location pointers in the managed objects." Nowhere in the reference of Axberg et al. is there disclosed that logical dependencies are maintained through the linking of the storage location pointers in the managed objects.

The combination of Davis et al. with Axberg et al. does not cure the deficiencies of Axberg et al. since Davis et al. has only been applied to show a SONET network for element management. Hence, the proposed combination fails to teach

numerous claim limitations including those discussed with respect to Claim 10. When analyzed under the foregoing legal standards, the combination of Axberg et al. and Davis et al. cannot be sustained. Moreover, there is no teaching, suggestion or motivation to modify Axberg et al. for use with a SONET ring network. On the contrary, the combination can only be made through hindsight reconstruction.

For these reasons, the final rejection of Claim 11 cannot be sustained.

3. Claim 12 is not rendered obvious by the combination of Axberg et al. and Davis et al.

Claim 12 is patentable for the reasons set forth above in regard to Claims 10 and 11 and further in view of the following: Axberg et al. does not teach actions that modify managed objects even occur, much less are stored in the database file that also stores commands as required by Claim 10 and in the transaction log file.

The combination of Davis et al. with Axberg et al. does not cure the deficiencies of Axberg et al. since Davis et al. has only been applied to show a SONET network for element management. As such, the proposed combination fails to teach or suggest numerous claim limitations. When analyzed under the foregoing legal standards, the combination of Axberg et al. and Davis et al. cannot be sustained. Moreover, there is no teaching, suggestion or motivation to modify Axberg et al. for use with a SONET ring network. On the contrary, the combination can only be made through hindsight reconstruction.

For these reasons, the final rejection of Claim 12 cannot be sustained.

4. Claim 21 is not rendered obvious by the combination of Axberg et al. and Davis et al.

Claim 21 is patentable for the reasons set forth above in regard to Claim 10 and further in view of the following: Claim 21 is dependant on Claim 10 and must be read in combination with Claim 10. Axberg et al. does not teach that one or more of the managed objects is accessed through direct links through the another of the managed objects. This is clearly required when Claim 21 is read in light of Claim 10. Axberg et al. does not teach one managed object accessing another managed object to configure and modify the another managed object through transactions as required by claims 10 and 21.

The combination of Davis et al. with Axberg et al. does not cure the deficiencies of Axberg et al. since Davis et al. has only been applied to show a SONET network for element management. When analyzed under the foregoing legal standards, the combination of Axberg et al. and Davis et al. cannot be sustained. There is no teaching, suggestion or motivation to modify Axberg et al. for use with a SONET ring network. On the contrary, the combination can only be made through hindsight reconstruction.

For these reasons, the final rejection of Claim 21 cannot be sustained.

B. THE REJECTION OF CLAIMS 13 THROUGH 20 AND 22 THROUGH 30 UNDER 35 USC 103 IS ERRONEOUS

The rejection of Claims 13 through 20 and 22 through 30 rely on the patent of Traversat et al. to supplement the teachings of Axberg et al. and Davis et al. Traversat et al. is cited for the proposition that it would be obvious to combine the teachings of

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the references for the purpose of providing a method for failure resolution in the event of an abort condition because it would provide maintenance and security for the integrity and stability of the configuration and transaction data in case of system failure or errors. The first flaw in this argument is that neither Axberg et al. nor Davis et al. disclose the underlying invention of claim 10 as discussed above. Secondly, Traversat et al. merely discloses a sequential process in which the top-most entry in a queue is read first, and then this is done for each entry in the event queue until all updates related to a transaction have been wiped out. In contrast, Claim 16 requires a transaction saving module and a recovery module. These modules are for saving the transmitted data for restoration to an object. Traversat et al. on the other hand deletes data when an operation is aborted. Further, Appellant respectfully submits that Traversat et al. does not supply any of the aforementioned deficiencies of Axberg et al. and Davis et al.

1. Claim 13 is not rendered obvious by the combination of Axberg et al., Davis et al. and Traversat et al.

Claim 13 is patentable for the reasons set forth above in regard to Claims 10, 11 and 12 and further in view of the following: It would not have been obvious to combine Traversat et al. with Axberg et al. and Davis et al. to provide in the event of an abort condition, a most recent configuration state of the network is restored by re-applying the transactions stored in the transaction log file, and resolving the pointer links contained in the affected ones of the managed objects, since Axberg et al. is a network planning tool, not a system of managing a configuration database within a network management program for a SONET ring network. Axberg et al. would have no reason

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for re-applying the transactions since Axberg et al. does not contemplate an abort condition. Thus, there is no suggestion in the references to support the combination.

For these reasons, the final rejection of Claim 13 cannot be sustained.

2. Claim 14 is not rendered obvious by the combination of Axberg et al., Davis et al. and Traversat et al.

Claim 14 is patentable for the reasons set forth above in regard to Claims 10, 11 and 12 and further in view of the following: It would not have been obvious to combine Traversat et al. with Axberg et al. and Davis et al. to provide a free space list maintained by the database manager, the free space list containing record number and size information for the managed objects that have been deleted. None of the references of record disclose providing a free space list. The attributes of the free space list are discussed in Appellant's specification at page 19 line 22 through page 20 line 11. The portions of Traversat et al. (col. 7 lines 20-57 and col. 8 lines 3-59) noted in the final rejection do not disclose a free space list as claimed in Claim 14.

It would not have been obvious to combine Traversat et al. with Axberg et al. and Davis et al. to provide a free space list, since Axberg et al. is a network planning tool, not a system of managing a configuration database within a network management program for a SONET ring network. Axberg et al. would have no reason for having a free space list. Thus, there is no suggestion in the references to support the combination.

For these reasons, the final rejection of Claim 14 cannot be sustained.

3. Claim 15 is not rendered obvious by the combination of Axberg et al., Davis et al. and Traversat et al.

Claim 15 is patentable for the reasons set forth above in regard to Claims 10, 11, 12 and 14 and further in view of the following: It would not have been obvious to combine Traversat et al. with Axberg et al. and Davis et al. to provide storage of the present state of the managed objects in a memory buffer. None of the references of record disclose providing a memory buffer to provide storage of the present state of managed objects upon modification by one or more the actions comprising one of the transactions. The portions of Traversat et al. noted in the final rejection do not disclose a memory buffer as claimed in Claim 15.

It would not have been obvious to combine Traversat et al. with Axberg et al. and Davis et al. to provide a memory buffer, since Axberg et al. is a network planning tool, not a system of managing a configuration database within a network management program for a SONET ring network. Axberg et al. would have no reason for having a memory buffer. Thus, there is no suggestion in the references to support the combination.

For these reasons, the final rejection of Claim 15 cannot be sustained.

4. Claims 16, 17 and 22 are not rendered obvious by the combination of Axberg et al., Davis et al. and Traversat et al.

At the outset, it should be understood that the reference of Axberg et al. is a network configuration planning program, not a network management program, i.e., Axberg et al. is a planning tool. (See Axberg et al. col. 2 lines 44-49) Therefore, Axberg et al. cannot meet any claim requirement that calls for actually managing a configuration database within a network management program for a computer network.

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Claim 16 pertains to an apparatus for managing a configuration database within a network management program for a computer network. The apparatus comprises among other features, "a loader module for loading a plurality of managed objects into system memory of the computer network upon a start-up event of the computer network wherein a first one of the managed objects includes object reference information and pointer information in order to access at least a second one of the managed transactions..." (emphasis added). This disclosure of Axberg et al. does not meet the claim language. First, Axberg et al. has no disclosure of a loader module for loading a plurality of managed objects into system memory of the computer network upon a start-up event of the computer network. Secondly, the claimed invention allows accessing of managed objects through direct links through other managed objects. This attribute is not found in the prior art of record.

Claim 16 further requires "an agent process for creating new transactions or opening existing transactions affecting one or more of the managed objects modified by the transactions". Axberg et al. does not disclose this portion of the apparatus. The examiner relies on Axberg et al. for "an agent portion 431 is part of the storage management program which performs data gathering and monitoring functions." (See col. 6, line 67 – col. 7, lines 1 and 2) This disclosure of Axberg et al. does not meet the claim requirement.

Likewise, the portion of claim 16 that recites " a transaction saving module for saving the loaded transactions in non-volatile memory" cannot be met by the disclosure of Axberg et al. since Axberg et al. has no disclosure of a transaction saving module. Axberg et al. further does not disclose a recovery module.

The combination of Davis et al. with Axberg et al. does not cure the deficiencies of Axberg et al. since Davis et al. has only been applied to show a SONET network for element management. For these reasons, the final rejection of Claim 16 cannot be sustained.

It would not have been obvious to combine Traversat et al. with Axberg et al. and Davis et al. to provide a loader module or a recovery module or any other of the claim requirements that are not disclosed in Axberg et al. or Davis et al., since Axberg et al. is a network planning tool, not a system of managing a configuration database within a network management program for a computer network. Axberg et al. would have no reason for restoring previous transactions since Axberg et al. does not contemplate a failure condition. Thus, there is no suggestion in the references to support the combination of Axberg et al. and Davis et al. in view of Traversat et al.

For these reasons, the final rejection of Claims 16, 17 and 22 cannot be sustained.

5. Claim 18 is not rendered obvious by the combination of Axberg et al., Davis et al. and Traverset et al.

Claim 18 is patentable for the reasons set forth above in regard to Claims 16 and 17 and further in view of the following: It would not have been obvious to combine Traversat et al. with Axberg et al. and Davis et al. to provide a computer network comprising a parallel ring network and a second standby network coupling each network element in the network.

The combination of Davis et al. and Traversat et al. with Axberg et al. does not cure the deficiencies of Axberg et al. since Davis et al. has only been applied to show a

SONET network for element management. When analyzed under the foregoing legal standards, the combination of Axberg et al. and Davis et al. cannot be sustained. There is no teaching, suggestion or motivation to modify Axberg et al. for use with a SONET ring network. On the contrary, the combination can only be made through hindsight reconstruction.

For these reasons, the final rejection of Claim 18 cannot be sustained.

6. Claim 19 is not rendered obvious by the combination of Axberg et al., Davis et al. and Traverset et al.

Claim 19 is patentable for the reasons set forth above in regard to Claims 16, 17 and 18 and further in view of the following: In claim 16, the agent process is for creating new transactions or opening existing transactions affecting one or more of the managed objects modified by the transactions. Claim 19 further defines the agent process as comprising one of an alarm manager process, an automatic protection process, and a configuration manager program. This invention as claimed is not disclosed in any of the applied references, and hence, the proposed combination does not render obvious Claim 19.

When analyzed under the foregoing legal standards, the combination of Axberg et al. and Davis et al. and Traversat et al. cannot be sustained. There is no teaching, suggestion or motivation to modify the combination to add an agent process as claimed. On the contrary, the combination can only be made through hindsight reconstruction.

For these reasons, the final rejection of Claim 19 cannot be sustained.

7. Claim 20 is not rendered obvious by the combination of Axberg et al., Davis et al. and Traverset et al.

Claim 20 is patentable for the reasons set forth above in regard to Claims 16, 17, 18 and 19 and further in view of the following: Claim 20 further defines the network as a SONET ring network and the managed objects comprise portions of control cards within nodes of the computer network. This invention as claimed is not disclosed in any of the applied references.

The combination of Davis et al. with Axberg et al. does not cure the deficiencies of Axberg et al. since Davis et al. has only been applied to show a SONET network for element management. Accordingly, the proposed combination does not teach or suggest numerous claim limitations. Further, when analyzed under the foregoing legal standards, the combination of Axberg et al. and Davis et al. cannot be sustained. There is no teaching, suggestion or motivation to modify Axberg et al. for use with a SONET ring network. On the contrary, the combination can only be made through hindsight reconstruction.

When analyzed under the foregoing legal standards, the combination of Axberg et al. and Davis et al. and Traversat et al. cannot be sustained. There is no teaching, suggestion or motivation to modify the combination to meet the claim limitation that the managed objects comprise portions of control cards within nodes of the computer network. On the contrary, the combination can only be made through hindsight reconstruction.

For these reasons, the final rejection of Claim 20 cannot be sustained.

8. Claims 23, 24 and 25 are not rendered obvious by the combination of Axberg et al., Davis et al. and Traversat et al.

At the outset, it should be understood that the reference of Axberg et al. is a network configuration planning program, not a network management program, i.e., Axberg et al. is a planning tool. (See Axberg et al. col. 2 lines 44-49) Therefore, Axberg et al. cannot meet any claim requirement that calls for actually managing a configuration database within a network management program for a SONET ring network.

Claims 23, 24 and 25 pertain to a system of managing a configuration database within a network management program for a SONET ring network. The claimed invention requires a plurality of managed objects representing logical representations of network entities that can be configured and modified through transactions executed by the network management program, wherein at least a first one of the managed objects includes object reference information and pointer information in order to access at least a second one of the managed transactions. The claimed invention allows accessing of managed objects through direct links through other managed objects. This attribute is not found in the prior art of record.

Claim 23 further requires "an agent process that receives transaction commands from a command handler". The examiner relies on Axberg et al. for "an agent portion 431 is part of the storage management program which performs data gathering and monitoring functions." (See col.6, line 67 – col. 7, lines 1 and 2) This disclosure of Axberg et al. does not meet the claim requirement because Axberg et al. does not disclose an agent process that receives transaction commands from a command handler.

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Likewise, the portion of claim 23 that recites " a database manager that receives transaction commands from the agent process" cannot be met by the disclosure of Axberg et al. since Axberg et al. has no disclosure of a database manager that receives transaction commands from an agent process. Further, Claim 23 requires a database file that stores commands from the database manager in the active network. Axberg et al. does not disclose a database manager in an active network or a transaction log file that stores actions included within the transactions issued by the database manager or a synchronization manager that writes the actions included within the transactions to a synchronization database stored on the standby network.

The combination of Davis et al. with Axberg et al. does not cure the deficiencies of Axberg et al. since Davis et al. has only been applied to show a SONET network for element management. The addition of Traversat et al. to the combination does nothing to supplement the lack of disclosure of Axberg et al. and Davis et al.

For these reasons, the final rejection of Claims 23, 24 and 25 cannot be sustained.

9. Claim 26 is not rendered obvious by the combination of Axberg et al., Davis et al. and Traverset et al.

Claim 26 is patentable for the reasons set forth above in regard to Claims 23, 24 and 25 and further in view of the following: Claim 26 further defines the system wherein in the event of an abort condition, the most recent configuration state of the network is restored by re-applying the transactions stored in the transaction log file, and resolving the pointer links contained in the affected managed objects. Since Axberg et al. is a network planning tool, not a system of managing a configuration database

within a network management program for a SONET ring network, Axberg et al. would have no reason for re-applying the transactions since Axberg et al. does not contemplate an abort condition. Thus, there is no suggestion in the references to support the combination.

When analyzed under the foregoing legal standards, the combination of Axberg et al. and Davis et al. and Traversat et al. cannot be sustained. There is no teaching, suggestion or motivation to modify the combination to meet the claim limitation that the most recent configuration state of the network is restored by re-applying the transactions stored in the transaction log file, and resolving the pointer links contained in the affected managed objects. On the contrary, the combination can only be made through hindsight reconstruction.

For these reasons, the final rejection of Claim 26 cannot be sustained.

10. Claim 27 is not rendered obvious by the combination of Axberg et al., Davis et al. and Traverset et al.

Claim 27 is patentable for the reasons set forth above in regard to Claims 23, 24 and 25 and further in view of the following: It would not have been obvious from the combination of Traversat et al. with Axberg et al. and Davis et al. to provide a free space list maintained by the database manager, the free space list containing record number and size information for the managed objects that have been deleted and are available for use. *None of the references of record disclose providing a free space list.* The attributes of the free space list are discussed in Appellant's specification at page 19 line 22 through page 20 line 11. The portions of Traversat et al. (col. 7 lines 20-57 and col. 8 lines 3-59) noted in the final rejection do not disclose a free space list as claimed

in Claim 27. Accordingly, the proposed combination does not render obvious Claim 27.

Further, it would not have been obvious to combine Traversat et al. with Axberg et al. and Davis et al. to provide a free space list, since Axberg et al. is a network planning tool, not a system of managing a configuration database within a network management program for a SONET ring network. Axberg et al. would have no reason for having a free space list. Thus, there is no suggestion in the references to support the combination.

For these reasons, the final rejection of Claim 27 cannot be sustained.

11. Claim 28 is not rendered obvious by the combination of Axberg et al., Davis et al. and Traversat et al.

Claim 28 is patentable for the reasons set forth above in regard to Claims 23, 24, 25 and 27 and further in view of the following: It would not have been obvious to combine Traversat et al. with Axberg et al. and Davis et al. to provide storage of the present state of the managed objects in a memory buffer. *None of the references of record disclose providing a memory buffer to provide storage of the present state of managed objects upon modification by one or more the actions comprising one of the transactions.* The portions of Traversat et al. noted in the final rejection do not disclose a memory buffer as claimed in Claim 15.

Further, it would not have been obvious to combine Traversat et al. with Axberg et al. and Davis et al. to provide a memory buffer, since Axberg et al. is a network planning tool, not a system of managing a configuration database within a network management program for a SONET ring network. Axberg et al. would have

no reason for having a memory buffer. Thus, there is no suggestion in the references to support the combination.

For these reasons, the final rejection of Claim 28 cannot be sustained.

12. Claim 29 is not rendered obvious by the combination of Axberg et al., Davis et al. and Traversat et al.

Claim 29 is patentable for the reasons set forth above in regard to Claims 23, 24, 25, 27 and 28 and further in view of the following: It would not have been obvious to combine Traversat et al. with Axberg et al. and Davis et al. to update the present state of managed objects on the standby network by the synchronization manager upon occurrence of a failure condition of the active network. *None of the references of record disclose a synchronization manager.* The portions of Traversat et al. noted in the final rejection do not disclose a synchronization manager as claimed in Claim 29.

Further, it would not have been obvious to combine Traversat et al. with Axberg et al. and Davis et al. to provide a synchronization manager, since Axberg et al. is a network planning tool, not a system of managing a configuration database within a network management program for a SONET ring network. Axberg et al. would have no reason for having a synchronization manager. Thus, there is no suggestion in the references to support the combination.

For these reasons, the final rejection of Claim 29 cannot be sustained.

13. Claim 30 is not rendered obvious by the combination of Axberg et al., Davis et al. and Traversat et al.

Claim 30 is patentable for the reasons set forth above in regard to Claim 23 and further in view of the following: Axberg et al. does not teach that one or more of the managed objects is accessed through direct links through the another of the

managed objects. This is clearly required by the claim language as is seen when Claim 30 is read in light of Claim 23. Axberg et al. does not teach one managed object accessing another managed object to configure and modify the another managed object through transactions as required by claim 30.

The secondary references of Davis et al. and Traversat et al. do not cure the deficiencies of Axberg et al. since Davis et al. has only been applied to show a SONET network for element management and Traversat et al. has no bearing on the patentablility of Claim 30 since it was not used to reject claim 21. When analyzed under the foregoing legal standards, the combination of Axberg et al. and Davis et al. cannot be sustained. There is no teaching, suggestion or motivation to modify Axberg et al. for use with a SONET ring network. On the contrary, the combination can only be made through hindsight reconstruction.

For these reasons, the final rejection of Claim 30 cannot be sustained.

VIII. CONCLUSION

When evaluated under the controlling legal standards, the Examiner's rejections of Claims 10 through 30 cannot be sustained. Hence, Appellants respectfully request that all grounds of rejection be reversed.

A check in the amount of $500.00 has previously been submitted to satisfy the government fee for filing the subject appeal brief. It is believed that no additional fees are due. However, should that determination be incorrect, the Commissioner is hereby authorized to charge any deficiencies to Deposit Account No. 50-0562 and notify the undersigned in due course.

Respectfully submitted,

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IX. CLAIMS APPENDIX

10. A system of managing a configuration database within a network management program for a SONET ring network, the system comprising:

a plurality of managed objects representing logical representations of network entities that can be configured and modified through transactions executed by the network management program, wherein one or more of the managed objects include an object reference and a storage location pointer to another of the managed objects, the another of the managed objects being accessed by a combination of the object reference and the storage location pointer associated with the one or more of the managed objects;

an agent process that receives transaction commands from a command handler;

a database manager that receives the transaction commands from the agent process;

a database file that stores commands from the database manager; and

a transaction log file that stores actions included within transactions issued by the database manager.

11. The system of claim 10, wherein logical dependencies among each of the managed objects are maintained through the linking of the storage location pointers in the managed objects.

12. The system of claim 11, wherein actions that modify the managed objects are stored in the database file and the transaction log file.

13. The system of claim 12, wherein, in the event of an abort condition, a most recent configuration state of the network is restored by re-applying the transactions stored in the transaction log file, and resolving the pointer links contained in affected ones of the managed objects.

14. The system of claim 12, further comprising a free space list maintained by the database manager, the free space list containing record number and size information for the managed objects that have been deleted and are available for use.

15. The system of claim 14, wherein a present state of the managed objects is stored in a memory buffer upon modification by one or more the actions comprising one of the transactions.

16. An apparatus for managing a configuration database within a network management program for a computer network, the apparatus comprising:

a loader module for loading a plurality of managed objects into system memory of the computer network upon a start-up event of the computer network

wherein a first one of the managed objects includes object reference information and pointer information in order to access at least a second one of the managed transactions;

an agent process for creating new transactions or opening existing transactions affecting one or more of the managed objects modified by the transactions, ;

a transaction saving module for saving the loaded transactions in non-volatile memory; and

a recovery module for restoring previous transactions executed prior to a failure condition.

17. The apparatus of claim 16, further comprising a memory map storing the object reference information and the pointer information for each of the managed objects.

18. The apparatus of claim 17, wherein the computer network comprises a parallel ring network including a first working network and a second standby network coupling each network element in the network.

19. The apparatus of claim 18, wherein the agent process comprises one of an alarm manager process, an automatic protection process, and a configuration manager program.

20. The apparatus of claim 19, wherein the computer network is a SONET ring network, and the managed objects comprise portions of control cards within nodes of the computer network.

21. The system of claim 10, wherein the one of more of the managed objects is accessed through direct links through the another of the managed objects.

22. The apparatus of claim 16, wherein the at least second one of the managed objects is accessed through direct links through the at least the first one of the managed objects.

23. A system of managing a configuration database within a network management program for a SONET ring network including an active network coupled in parallel to a standby network, the system comprising:

a plurality of managed objects representing logical representations of network entities that can be configured and modified through transactions executed by the network management program, wherein at least a first one of the managed objects includes object reference information and pointer information in order to access at least a second one of the managed transactions;

an agent process that receives transaction commands from a command handler;

a database manager that receives the transaction commands from the agent process;

a database file that stores commands from the database manager in the active network;

a transaction log file that stores actions included within transactions issued by the database manager; and

a synchronization manager that writes the actions included within the transactions to a synchronization database stored on the standby network.

24. The system of claim 23, wherein each managed object includes an object reference key and a storage location pointer and wherein logical dependencies among objects are maintained through the linking of storage location pointers in the managed objects.

25. The system of claim 24, wherein actions that modify the managed objects are stored in the database file and the transaction log file.

26. The system of claim 25, wherein, in the event of an abort condition, the most recent configuration state of the network is restored by re-applying the transactions stored in the transaction log file, and resolving the pointer links contained in the affected managed objects.

27. The system of claim 25, further comprising a free space list maintained by the database manager, the free space list containing record number and size information for the managed objects that have been deleted and are available for use.

28. The system of claim 27, wherein the present state of the managed objects on the active network is stored in a memory buffer upon modification by one or more the actions comprising one of the transactions.

29. The system of claim 28, wherein the present state of managed objects on the standby network are updated by the synchronization manager upon occurrence of a failure condition of the active network.

30. The system of claim 23, wherein the at least second one of the managed objects is accessed through direct links through the at least the first one of the managed objects.

X. EVIDENCE APPENDIX

None.

XI. RELATED PROCEEDINGS APPENDIX

None.